Biogen Inc.

Biogen Inc. - Q2 2023 Earnings Call

Tuesday, July 25, 2023 8:00 AM

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Operator Operator

Good morning. My name is Ruth, and I will be your conference operator today. At this time, I would like to welcome everyone to the Biogen's Second Quarter 2023 Earnings Call and Business Update. [Operator Instructions] Today's conference is being recorded.

At this time, I would now like to turn the conference over to Mr. Chuck Triano, Head of Investor Relations. Mr. Triano, you may begin your conference.

Charles Triano Executive

Thank you, operator. Good morning, and welcome to Biogen's Second Quarter 2023 Earnings Call. Before we begin, I encourage everyone to go through the Investors section of biogen.com to find the earnings release and related financial tables, including our GAAP financial measures and a reconciliation of the GAAP to non-GAAP financial measures that we will discuss today. Our GAAP financials are provided in Tables 1 and 2, and Table 4 includes a reconciliation of our GAAP to non-GAAP financial results. We believe non-GAAP financial results better represent the ongoing economics of our business and reflect how we manage the business internally.

We have also posted slides on our website that will follow the discussion related to this call. I would like to point out that we will be making forward-looking statements, which are based on our expectation. These statements are subject to certain risks and uncertainties, and our actual results may differ materially. I encourage you to consult the risk factors discussed in our SEC filings for additional detail.

On today's call, I'm joined by our President and Chief Executive Officer, Chris Viehbacher, Dr. Priya Singhal, Head of Development; and our CFO, Mike McDonnell. Chris, Priya and Mike will

each make some opening comments, and then we'll move to the Q&A session. To allow us to get through as many questions as possible, we kindly ask that you limit yourself to 1 question.

I will now turn the call over to Chris.

Christopher Viehbacher Executive

Thank you, Chuck. Good morning, everybody.

I'd like to start off with LEQEMBI. And I think before we really get into all the interesting details of commercialization and competitiveness, I just like to pause for a moment. This is an historic moment in health care history. We're talking about the very first disease-modifying treatment that's been approved, full -- has received full approval from the FDA and reimbursement from CMS. And there have been literally dozens of medicines that have failed before this drug ever got to market.

And that's important for a couple of reasons.

The first is that, there's an awful lot we still don't know. We are really at the beginning of a journey to really understand Alzheimer's disease and how we can affect this disease. But it's also going to have a big impact on the practice of medicine. Physicians haven't been able to really help patients very much beyond perhaps prescribing donepezil or products like that. And the treatment that we are proposing here really is going to change an awful lot of how physicians practice and treat these patients.

So as we start thinking about intent to prescribe and how physicians are looking at things, we're actually not going to know that until we actually get out there in the marketplace and see how patients respond. ADUHELM did get approved, but as you all know, it never really got out of the blocks and never really got launched. So this is really a first. And whenever you're first, we're going to be discovering an awful lot. And a lot of this is just not that predictable.

I would, again, just call out kudos to our colleagues at Eisai. Within a very short period of time, you were able to get regulatory filings in the EU, Japan, China, Canada, Great Britain and South Korea. So this is going to be truly a global launch. Now we just had the AAIC last week, Priya will cover off a little bit more about that. But one of the things that has become obvious is when we start looking at donanemab and lecanemab.

These are 2 very different products. And I don't think most people have actually really looked at that. Most people are looking at, okay, we've got an A-beta antibody and we're removing plaques. But there's a whole lot more to the story. And this is going to evolve over the next months and years.

This is a -- these are different products. They have different mechanisms because they have different binding. They've been studied in different populations. They've been studied with different clinical study design approaches. And of course, they have a very different safety profile.

And all of these differences are going to play out in the marketplace over the coming months and years. And it will be interesting to see how that is, but I would just caution everybody as we get into this and you see all of the data, there's an awful lot of subtlety to this, and it's

going to be quite interesting from a commercial point of view. The launch is underway in the U.S. We did get full approval earlier this month and CMS approval, that has significance also for others. This is going to encourage a lot of other companies to be investing in research and blood diagnostics.

It's also, as you know, going to be an unusual launch. There's an awful lot that has to be done. We're going to have patient navigators to help navigate the process to understand how treatment will occur, getting reimbursement. We will be working with physician offices, an awful lot of change that will have to occur in the practice -- in their practices on a day-to-day basis. There's an awful lot of education around safety, making sure that the right patients are in place.

We have reached out to about 700 centers to date. We're also getting reimbursement beyond CMS. We have Medicaid, for example, in 48 out of the 50 states so far. And we have had very good response from commercial insurers. So I think the launch of LEQEMBI is off to a very good start, and we'll, of course, keep you up to date as we get further information.

I'll move on to another slide here. One of the things that we've been doing an awful lot in the past months is really making sure that we are well positioned for growth. And as we looked at the company, there's where we were. As you know, today, we have a relatively mature product profile. Generally, when you have a mature product profile, you'd expect the level of investment to go down.

We have actually relatively high operating expenses when we benchmark versus other companies. Part of that is an overinvestment in legacy products, but we also have an extremely centralized governance. We've got many organizational levels. We have a low span of control. On average, we have a span of control of 3 and then as we look at the R&D pipeline, we've had 5 different heads of R&D in 10 years.

And that's not good for an R&D organization. And as a result, we ended up with some products that I think were relatively high risk and high cost and not necessarily of the highest value. So we've been through an extensive project to really review those R&D programs. And as we looked at where do we want to be? Well, we want to be making more value-based decisions for existing products.

We don't want to just remove the promotional effort tightly. Biogen is still 25% market share in multiple sclerosis. We have the highest market share by a considerable margin. And so there is -- there are an awful lot of patients who depend on Biogen products. But I think we can do that smarter.

There's a need, obviously, to have strong investment in our new product launches. It's important clearly to manage costs, but shareholder value will be most optimized if we can really make a success with these launches. We need to get decision-making closer to customers. We want greater agility in the organization and we want to focus on high-value projects in R&D. External growth will really give us the opportunity to diversify away from rare diseases -- diversify into rare diseases, immunology and neuropsychiatry.

So we did this redesign effort. What we did was a bottom-up exercise to look at where do we need to be as a company [who will be] successfully launching new products, what kind of

internal governance mechanisms do we want? What kind of metrics do we want? What kind of accountability? And so there's been, as I say, a complete redesign of Biogen and that will lead some cost savings.

There are gross cost savings, which will be about $1 billion in annualized savings per year. Of that, we expect to invest at least $300 million in growth opportunities going forward. So this is an opportunity really to make sure in this year before we get into the product launches that we were truly fit for growth. And with that, I'll turn it over to Priya.

Priya Singhal Executive

Thank you, Chris. We believe that the traditional approval of LEQEMBI is a significant milestone for the Alzheimer's field. We also recognize that the pursuit of effective therapies for Alzheimer's is far from over. Biogen and Eisai are continuing to generate data on LEQEMBI across the Alzheimer's disease continuum. Amyloid pathology can begin years before the onset of symptoms.

There is the potential to maximize therapeutic effect of LEQEMBI by treating earlier to delay or even prevent the onset of Alzheimer's. Eisai and Biogen initiated the AHEAD 3-45 Trial in 2020 to evaluate this approach. This consists of 2 sister trials in cognitively unimpaired individuals aged 55 to 80 with intermediate or elevated levels of amyloid on PET screening and they will be evaluated over 48 months. With the approval of LEQEMBI in the U.S., we also modified our protocol for the AHEAD Trial to allow for open-label LEQEMBI rescue should patients progress to early AD, while being enrolled in the trial. We believe the clinical profile of LEQEMBI is uniquely suited for the early intervention approach, with robust plaque clearance, low incidence of ARIA and optionality of longer duration treatment to potentially maximize clinical benefit.

We are working to improve and simplify the patient journey for LEQEMBI in early AD. We have 2 areas of focus: a subcutaneous formulation where the auto-injector to potentially enable at-home administration is underway. Eisai recently presented modeling data at AAIC, suggesting that subcutaneous lecanemab for Biosimilar exposure and amyloid plaque reduction and biweekly IV formulation but with a potential for lower incidence of ARIA. Regulatory filing is expected by the end of Q1 2024. Second is maintenance dosing, evaluating less frequent maintenance dosing in the Phase II open-label extension.

Regulatory filing is also expected by the end of Q1 2024. We are also continuing to analyze the Clarity AD data where we have observed consistent reductions in both amyloid and tau PET and improved clinical outcomes as we aim to better inform treatment decisions for patients. Clarity AD study did not use baseline tau PET as an exclusion criteria and enrolled a broad population of early AD patients with varying degrees of tau pathology at baseline. This important aspect of the Clarity AD study allowed the generation of data on individuals with low tau burdens that has not been collected in other Phase III programs. At AAIC, Eisai presented baseline characteristics and a new analysis containing the initial results from the tau PET sub-study of Clarity AD.

In this analysis, individuals enrolled in the tau PET sub-study were categorized into high, medium and low groups based upon tau burden measured at baseline. Lecanemab

administration showed a clinical effect in the overall population of the tau PET sub-study and notably a large effect size was also observed in the low tau population defined in this analysis, which does represent the early phase of AD. We believe this data further supports the clinical benefit observed with LEQEMBI in the broad early AD population and again emphasizes the importance of treating patients early. Biogen plans to build upon our industry-leading position in therapeutics for A-beta clearance and tau knock down by advancing a multi-target, multi-modality portfolio, inclusive of also other emerging targets in the Alzheimer's disease pathway. This is inclusive of programs targeting tau.

BIIB080, a Phase II targeting antisense oligonucleotide and BIIB113, a Phase I small molecule aiming to prevent tau acquisition. Turning to SMA. The interim results from the RESPOND study were presented at the Cure SMA conference recently and highlight that most participants and investigator and caregiver reported suboptimal clinical status across multiple domains at baseline following Zolgensma treatment. This included motor function, swallowing or feeding ability and respiratory function. Potentially, we believe this is due to likely incomplete transduction of motor neurons following gene therapy administration.

The internal results at 6 months show improvements in motor function in most participants as measured by the increased total time to score from baseline with no new emerging safety concerns identified. Overall, we believe these results suggest that there may be potential for additional benefit with SPINRAZA treatment following Zolgensma administration. The R&D organization, as Chris mentioned, has spent significant time and energy over the last several months in conducting a comprehensive review of Biogen's R&D programs as we aim to improve the risk profile and productivity of the pipeline. We made a number of significant decisions and identified the programs we want to prioritize and others where we assess the challenges resulted in a low probability adjusted return on investment and thus were promptly modified or discontinued. We believe that this has resulted in a leaner pipeline with an overall greater probability of success and a sharper focus on key programs.

The examples shown here all have data readouts expected over the next few years. BIIB080, a Phase II targeting -- tau targeting ASO, which has Phase Ib data showing a time and dose-dependent reduction in CSF total tau and phospho-tau as well as tau tangles visualized via tau PET. Litifilimab, a subcutaneous anti-BDCA2 antibody, currently being evaluated in 2 Phase III studies in systemic lupus erythematosus and a Phase II/III study in cutaneous lupus erythematosus.

BIIB105, an ataxin-2 ASO, being evaluated in a Phase I/II study in broad sporadic ALS, we expect to read out midyear 2024. BIIB122, a LRRK2 ASO being developed in partnership with Denali Therapeutics currently in a Phase IIb study for idiopathic Parkinson's disease and BIIB121, an ASO aiming to increase the expression of paternal UBE3A in Angelman syndrome, and we expect the Phase I to read out midyear 2024. In summary, this past quarter, we continued to make significant advancements across our pipeline, most notably with the traditional approval of LEQEMBI in early AD. While our initial substantial review of the pipeline is complete, we will continue to evaluate both current and potential new R&D programs using a data-driven approach with a keen eye toward risk balance and value creation. I will now pass the call over to Mike.

Michael McDonnell Executive

Thank you, Priya, and good morning, everyone. I'll provide some highlights and color regarding our financial performance for the second quarter and all of the financial comparisons that you will hear are versus the second quarter of 2022. Total revenue for the second quarter was $2.5 billion. That's a decrease of 5% at actual currency and 3% at constant currency. Non-GAAP diluted earnings per share in the second quarter was $4.02.

Total MS product revenue was $1.2 billion. That's a decrease of 15% at actual currency and 14% at constant currency. So a few recent updates to the MS business this quarter. First, the decline in MS in the second quarter was attributable to generic entrants for TECFIDERA and broad competition in the MS market. We did not see much in the way of channel dynamics during the second quarter.

Second, as we did announce previously, TECFIDERA's regulatory market protection in the EU was extended by one additional year until February 2, 2025. Some of the TECFIDERA generics have not yet fully exited some of the EU markets and some generic products remain in the channel. The pace of generic withdrawal has been slower than we expected, and we're closely monitoring the situation and working to enforce our legal right to market protection. Regarding TYSABRI, we have previously said that there may be a TYSABRI Biosimilar launch in the U.S. and EU sometime later in 2023.

We are aware of the positive CHMP opinion for the TYSABRI Biosimilar in the EU last week. And while we have not seen any Biosimilar launches so far, we could see an approval and launch in the coming months.

Moving on now to SMA. Global SPINRAZA revenue of $437 million, increased 1% at actual currency and 5% at constant currency. SPINRAZA growth in the U.S. was 12%, and that was driven by patient growth. We were encouraged by the performance this past quarter and believe we are making good progress against our goal of returning SPINRAZA to consistent growth.

Also, as Priya mentioned, we are continuing to generate data to support the efficacy profile of SPINRAZA and we believe that this, along with the expected overall market expansion should help enable continued, improved performance for SPINRAZA.

Biosimilars revenue of $195 million, was flat at actual currency and increased 4% at constant currency. We are continuing to manage supply constraints for IMRALDI and BENEPALI and are monitoring this situation very closely. We've referenced previously that we are evaluating whether this business could create more value outside of Biogen and we are engaged with multiple interested parties and will provide further updates on that process as appropriate. Alzheimer's disease revenue, which includes revenue from ADUHELM, and the LEQEMBI collaboration equated to a headwind of $20 million to revenue during the second quarter. As a reminder, LEQEMBI revenue represents our 50% of in-market revenue, less 50% of commercialization expenses.

We expect this line to continue to be negative in 2023 as the ramping of LEQEMBI commercialization expenses will exceed initial revenue. Total anti-CD20 revenue of $433 million, was down 1% and included a $12 million operating loss related to LUNSUMIO. As a

reminder, starting this quarter, our pretax profit share on RITUXAN, GAZYVA and LENSUMIO decreased from 37.5% to 35% and that's due to the achievement of certain sales targets for GAZYVA as part of our contractual agreement with Genentech.

Contract manufacturing, royalty and other revenue of $198 million was notably higher year-over-year and that was driven mainly by the timing of batches. A couple of details regarding Q2 expenses. For the second quarter, non-GAAP cost of sales was 24% of total revenue and that includes $34 million of idle capacity charges. We continue to see higher cost of sales as a percentage of revenue as a result of product mix and idle capacity charges. And in particular, the increases that we are seeing in contract manufacturing revenue increases our overall cost of sales as a percentage of revenue.

So in terms of modeling for the remainder of 2023, I'd offer that we believe contract manufacturing revenue will remain strong and will contribute to a higher cost of sales as a percentage of revenue for the remainder of this year as compared to the 24.1% that we saw in the second quarter. Second quarter non-GAAP R&D expense includes roughly $13 million in estimated study close-up costs related to BIIB093. As Priya mentioned, we're now substantially complete with our R&D prioritization. We estimate that this will result in gross savings of approximately $250 million next year, though this will be partially offset by natural increases in R&D due to portfolio progression. The decrease in second quarter SG&A expense was attributed to roughly $70 million of savings initiatives, and that was partially offset by approximately $35 million of reinvestments mostly related to launch costs.

We continue to expect our operating expenses to be lower in the second half of the year than in the first half as we complete the run rate savings from our previously announced cost initiatives as well as a modest impact from our new Fit for Growth initiative.

So now I'd like to take a minute to provide a little bit of additional detail on our new Fit for Growth program. This program will include changes to our operating model with a significant reduction of certain centralized functions. A substantial portion of the $700 million of net annual OpEx savings are expected to come from a net headcount reduction of approximately 1,000, which we expect to rightsize the company with our business plan and enable us to return to sustainable growth. I would reiterate that the OpEx savings shown here are on an annualized basis. We believe that this is an efficient program with 70% of our expected gross OpEx savings to be realized as net savings.

All in, we expect a very modest impact on 2023 expenses and believe the net OpEx savings will be split roughly equally between 2024 and 2025, and all of these savings are incremental to any previously announced cost reduction programs. A few quick comments on our balance sheet, including the approximately $813 million that we received during the quarter related to the sale of our equity stake in Samsung Bioepis. We ended the quarter with $7.3 billion in cash and marketable securities. On June 30, we had $6.3 billion in debt, and that puts us in a net cash position of roughly $1 billion. We continue to generate steady positive cash flow from operations with free cash flow of $416 million during the second quarter.

And finally, now let me turn to our financial guidance for full year 2023. The business remains on track with our forecast for the full year. And today, we are reaffirming our full year guidance of a full year 2023 revenue decline in the mid-single-digit percentage range as compared to

2022 reported results. And full year 2023 non-GAAP diluted earnings per share of between $15 and $16 and you can refer to our press release for other important guidance assumptions. So now I'll turn it back over to Chris for a few closing comments.

Christopher Viehbacher Executive

Thank you, Mike. Well, in addition to reengineering our cost base, we're actually also reengineering the marketed portfolio of products. We've already had 2 approvals this year of QALSODY and LEQEMBI in the United States. As we look forward for the rest of the year and into early next year, we have a number of other important milestones for our portfolio. We are expecting a decision by the PMDA in Japan in the third quarter, by the EMA in Europe in the first quarter of next year and in the first quarter of next year also in China.

We also are expecting a decision by the FDA on Zuranolone actually next week potentially. And then we also are continuing to evolve LEQEMBI. As Priya said, we are expecting to be able to submit the regulatory dossiers for LEQEMBI subcu in Q1 of next year and also a regulatory filing for maintenance dosing next year. So in addition to that, with the new product approvals that are expected, we're going to continue, obviously, to look through our external growth opportunities. As I have said before, this is an opportunity to expand the portfolio more into rare diseases, into immunology and neuropsychiatry.

So with that, Chuck, we'll turn it back and invite questions.

Charles Triano Executive

Thanks, Chris. Operator, can we please poll for questions?

Operator Operator

[Operator Instructions] Your first question comes from the line of Brian Abrahams with RBC Capital Markets.

Brian Abrahams Analyst

Congrats on all the developments. So we recently saw some competitor data at a medical conference. And I guess I'm curious, as you've seen things evolve here, what are the most important learnings that you've been taking away on the overall beta amyloid class efficacy and safety profiles? And can you maybe expand a little bit more on your latest views on how you expect the competitive dynamics to play out in the space and the impact to your overall launch strategy?

Christopher Viehbacher Executive

Thanks for the question, Brian. This is going to be super interesting from a commercial point of view because there are an awful lot of different factors at play here. I think as I said, the markets are sort of thinking there's 2 A-beta antibodies here, and they remove plaque and that's it. And the story is actually a whole lot more complex.

First, I would say these are 2 products with -- that really go after the problem in a different way. And I think one of the most interesting things that's going to come out of this are the soluble protofibrils. These are the most neurotoxic forms of A-beta. And lecanemab goes

after those whereas donanemab doesn't. And these are the soluble forms.

And I think that will actually play a factor in our view, which is that this is going to be more of a chronic disease that you can remove the plaque, but the soluble forms and this is judged by what we're seeing in some of the biomarkers could actually still continue to play a role, which is why our belief is that we will need maintenance therapy over time. But there's also a difference in how these patients were studied. First, much different patient populations. Lecanemab was studied actually in an earlier patient population, roughly 2/3 were in MCI and 1/3 in mild. And donanemab was the reverse.

And this is important because there's different rates of progression amongst these patients. And so actually -- and when Priya talked about these low tau, which have no overlap with the low tau -- low to medium tau that donanemab study, these are patients that would really progress quite slowly. So to actually see an effect like that, I think, really speaks to the efficacy of this product. Then there's also all the different end points. Lilly measured their primary endpoint on a Lilly designed end point.

Lecanemab used the gold standard, which is the CDR-Sum of Boxes. But when you start looking at activities of daily life, you start to see differences and there are some other markers where we think we can demonstrate where efficacy is going to be. And then, of course, safety will be a big issue. When the most neurologists, if they've seen ARIA before, it's been pretty rare. I mean we do know that ARIA can occur even in the placebo group, but it's not something that'll have seen very often.

And so this is going to be a different thing for them first to think about monitoring for safety with the MRIs. But it's one thing to be at a conference and look at safety from a data point of view. It's another thing I think to actually be looking at MRIs and seeing ARIA. And I think the safety benefit of lecanemab will be quite important to physicians as we go forward. So there are a number of dimensions here that I think will be developed over time.

There's going to be all the different blood diagnostics that come along. Personally, my belief is that we're going to be seeing treatment progressively over the years in earlier patients before too much neuronal death has occurred. And of course, that's where LEQEMBI's benefit will arise where they have already studied much more of these patients. Generally, I would say Lilly has been focused on looking at subpopulations and trying to say, okay, in this subpopulation, we've got this result, in that subpopulation. But when physicians are dealing with patients in their practice, they don't want to deal with the subpopulation.

They want to have a medicine that actually has broad coverage. And I think that's where LEQEMBI will also demonstrate its benefits.

So it's going to be quite interesting. There's lots of data here to pour over that's come out of the AAIC and a lot of that will just become much more tangible over the coming months and years.

Operator Operator

Our next question comes from the line of Marc Goodman with Leerink Partners.

Marc Goodman Analyst

Mike, just to make sure we're all aligned here with the numbers and the cost savings. So OpEx, $4.5 billion for 2023. So we should be thinking $3.8 billion in 2025? And then how do we get there with respect to SG&A and R&D? Is this -- are they about even?

I mean, is R&D going to move below the $2 billion line? Just help us give us a sense of that and maybe just as you talk about the P&L. Just comment on -- do you expect gross margins to be higher or lower in kind of those years? Just to help us think about how the P&L is going to look?

Michael McDonnell Executive

Yes, Marc, thanks for the question. So your math is correct. Our goal would be to achieve a full run rate of the $700 million net savings in 2025. So on an OpEx base of $4.5 billion, that would take it to the neighborhood of about $3.8 billion. The savings will be both in SG&A and R&D.

We've already done quite a bit in R&D, as we talked about, that will yield a lot of savings with our prioritization program, but we'll also be looking at ways of conducting our clinical trials, our existing trials more efficiently. So the overall savings will be a mix. We're not providing full granularity on whether R&D will be plus or minus the $2 billion number that you threw out, but I would estimate that the savings from here would be probably a little more weighted to the SG&A line and a little less to R&D, but ultimately, the savings will come from both sides. The gross margin, that's a trend that we expect will continue at least for the near term. And when you look at the product mix, we obviously have the continuing declines in the -- some of the MS products, which are on the higher margin side and then you have contract manufacturing that's really growing quite a bit year-on-year.

So we do expect to see our cost of sales as a percentage of revenue, at least for the near term to be a bit lower than what we've -- or I should say, the cost of sales percentage would be higher, the gross margin would be lower than what we've seen in the past. And then over time, as LEQEMBI becomes profitable and ramps up, we should hopefully see some recovery up on the gross margin line.

Operator Operator

Our next question comes from the line of Robyn Karnauskas with Truist.

Robyn Karnauskas Analyst

I guess -- I would just be curious, initially, as you're talking to doctors about if there's a difference between the academic and the community setting and interest in using drug and coordinating that. Can you give us more details as to how laborious and how easy the CMS registry now that it's up and running is and what questions they're asking?

Christopher Viehbacher Executive

I think first on the registry, all the feedback is this is manageable. I think everybody would prefer not to have a registry, but personally been on it, there's drop-down menus. Most of the data are available from the medical record. So we think that, that part should be okay. There's

some bumpiness around the PET scan reimbursement that should be clarified in the next 90 days.

But I think where we are now, the one PET scan that is included should not be a barrier. I think there's just -- the mechanics actually of seeing patients that will change. There's going to be a need to do more of the cognitive testing, getting the PET scan or the lumbar puncture, figuring out where to go with the infusion centers and then getting the MRIs. There will be a routine that will develop in offices. But to start with, nobody is doing that right now, really.

I mean, we obviously have some centers that have been able to start infusing LEQEMBI during the period before full traditional approval. But if we look at the masses, everybody is having to gear up for this. I think one of the other things that I would say is there's been so much disappointment in this field over the years. A lot of hope, but a lot of these medicines didn't play out. And so I think there's been an awful lot of wait and see amongst the some of the medical community, are we really going to get full approval?

Are we really going to get CMS approval? So I think now that is in place, which is, as I said before, I think is a really seminal moment in health care. We'll see the practicality for this. And we've always said that this is going to be a relatively measured uptake on revenue. I will say that the whole field organization is geared up for this.

This is a much more complex field organization than what you would have with a typical launch with the care navigators, with MSLs, with field reps, with regional thought leader professionals. So there are going to be a lot of people actually holding hands with patients, with physician practices, trying to help make sure that this is as seamless as possible. And -- but it is not clearly as simple as just prescribing a pill and going down to your local pharmacy.

Operator Operator

Your next question comes from the line of Mohit Bansal with Wells Fargo.

Mohit Bansal Analyst

And maybe a question for Priya. So when you think about subcutaneous LEQEMBI, and you see the data later this year. But how do you think about positioning it? Is it -- do you think it is more of a maintenance treatment after the IV LEQEMBI versus an induction kind of treatment? And how important is Cmax to get an induction approval here?

Super helpful, thank you.

Priya Singhal Executive

Thank you, Mohit. So it's a great question. I think maybe before I answer that, I'll just say that Biogen and Eisai are really looking to simplify and improve the patient journey and this is a multipronged effort. One is subcutaneous formulation, which can address the infusion capacity and other issues with potential for an auto-injector and self-administration at home. And then the second is really thinking about how LEQEMBI can be positioned to really address the long-term duration question that is still out there.

The good news here is that LEQEMBI does have the opportunity to be treated -- to be used

with a long duration. And the question is, what is the right maintenance duration for this therapy? And with regards to subcutaneous, the data that we just presented at AAIC was modeling data to show that really the subcutaneous formulation would be about 720 milligrams administered weekly instead of the intravenous biweekly therapy. Now the important thing here to understand is that really, it is the hope and the data kind of point to the fact that safety could actually be better with the subcutaneous formulation. So we might have lower rates for ARIA.

And the filing is expected to be complete by Q1 2024. I also expect that more data, Eisai has communicated this will be released at CTAD this year. So I think let's wait for more of that data, which is, I think, forthcoming, and we look forward to the -- hopefully, simplifying the patient journey.

Operator Operator

Next is Umer Raffat with Evercore.

Umer Raffat Analyst

I feel like there's an elephant in the room, and I do think we should speak to it. And Chris, this one is for you specifically. And the question really is, investors are very curious what was your thought process on 2 specific occasions in the last few weeks? First, when you were first told about the proposed changes to the Board, what was your thought process? And second, what was your thought process in deciding whether or not you needed to put out any disclosures?

Christopher Viehbacher Executive

So I think if we just step back, I mean there's -- clearly, a lot of people got focused on some of the gossip here. But I think more fundamentally, there's been a significant change with our Board. And anybody who knows anything about Boards is that you only make significant changes to the Board through a consensus of the Board. Now, Board is a college of peers with equal power. And there had been a lot of significant investor outreach.

The company is doing an awful lot of change internally at a management level, addressing a lot of the concerns that investors, I think, have been raising for quite a number of years and certainly concerns that I have heard. And the Board actually said, well, we need to think about the governance and are we changing as well.

And I can tell you that all of the discussion to which I was a party, all concerned one thing, and that is what is right for Biogen. And I found that very encouraging. But we have a new chair and I have to say I couldn't be happier working with Caroline. She's someone of unimpeachable integrity, extremely smart, analytical but really has a real passion for the mission of the company. And I think the Board is clearly foursquare behind all of the changes that we're making.

So I think all of that is good. In terms of disclosure, we look at people. We don't look at their personal relationships. And I would just say that Glass Lewis and ISS recommended Susan Langer and investors voted or under the Board, and I don't think there's really anything more

to be -- that needs to be said about that.

Operator Operator

We have a question from Salveen Richter with Goldman Sachs.

Salveen Richter Analyst

How is the Fit for Growth in your cost alignment work influenced your thoughts on M&A and BD? And you've noted the 3 disease areas, but can you just provide some thoughts on the value proposition across the areas? Any limits with regard to size of the deal and the use of equity?

Christopher Viehbacher Executive

Fit for Growth, remember, is really reflecting the transition of the company. We have been very focused on multiple sclerosis over 45 years. We had some very prosperous times in the more recent history of the company. And as we have seen a reversal of fortunes in some of those products, I don't think we, as a company, have really made the changes in our organizational structure and our cost base to really reflect that transition. One of the things I'd like to tell our management teams is that the hardest word in management is And.

You have to think about the short term and the long term. But one of the things is you have to be cost efficient and you have to invest for growth. And that's been a very tricky exercise. We didn't have all the product launches, just cost reduction would be fairly easy. What we've had to do is be a lot more thoughtful about what is the best way to position Biogen going forward?

And that's why we didn't start with where we were, but we started with where we want to be. What is that organization? How many people? We benchmarked the organization.

We've looked at the -- making sure we have enough investment in the product launches, have enough investment in those exciting R&D projects that we would want to focus on and then work backwards from there. So I think the company is well positioned now to be oriented towards growth while also managing our historic portfolio. And again, I come back and saying we are still the market leaders in MS, and we have an obligation to both physicians and their patients on that. And so we will be changing the way we -- the promotional mix, but we're not going to just walk away from that either. And I think in terms of M&A and external growth, is really what do we do to build on that?

And that starts with BD at an earlier stage of the pipeline. Are there things that we want to build on to that? And in particular, as I've said in the past, I think -- we're proud of our position in neuroscience. The neurological conditions are slow progressing diseases and really require very expensive long trials. And they are ones where you can't really derisk them with a Phase II asset.

So we're not going to walk away by any means, but we do need to get into portfolio decisions where we can actually get a better read on efficacy and safety in Phase II and I think we can do that with the rare diseases with more of a focus on immunology. If you know -- we've never been far from immunology in the history of the company. And of course, with -- we already

are into our psychiatry and can we build that portfolio. But I think we have now a much more nimble structure, a more empowered organization. One of the things that comes out of our culture surveys is that we can take quite a long time to make a decision.

So in all of those things, when you're dealing with partners and you're dealing with business development, if you want to have that [indiscernible] that -- ability to be agile. And so I think Fit for Growth will actually facilitate that. But really, the approach to external growth is more strategic in how we shape the portfolio of the company.

Charles Triano Executive

And that limits the size or use of equity? It's part of the question, Chris.

Christopher Viehbacher Executive

I think we're really looking at what really makes sense for the company. I don't think we've seen anything that would require use of equity. And Mike, we've got, I think, about $7.3 billion in cash. So as far as I'm concerned, we don't -- everything that we think, we can manage with what we've got. The most important thing is to really -- one of the major things we try to do with Fit for Growth is really get a lot more rigorous about how we allocate capital.

We've had this very good fortune over the last few years. And when there's a lot of money in the company, don't have the same rigor about how you allocate capital. That is a real focus for us. We really want to make sure that we're putting our investments in the things that make the best returns for the company and our shareholders. And so that part is a cultural shift that's coming out of that, and I think that will affect how we think about business development as well.

Operator Operator

We'll go next to Michael Yee with Jefferies.

Michael Yee Analyst

Just wanted to ask on the Zuranolone program. Obviously, you have PDUFA date coming up. But Chris, you've made some pretty bullish comments on this before. Maybe rightsize your expectations about how to think about that opportunity and whether there could be a split label? And importantly, since you're talking about cost cutting, how a positive approval or maybe some various form of 2 different indications could impact expenses going forward?

So just talk a little bit about Zuranolone.

Christopher Viehbacher Executive

Yes. Well, we have a PDUFA date on August 5. So we'll be able to give you a full update once we've had the FDA decision. So I don't really want to talk about that process right now. I'll just say there is an enormous unmet need in [mental health].

And that only seems to be rising. You can't look at the news without reading about reports of the rise of mental health conditions. I think that partly got exacerbated by the pandemic. And one of the things is that, that affects that the pandemic did was I think really bring this more

out into the open where it belongs. Certainly, PPD is a huge unmet need, massive taboo around that.

And that will be quite a heavy lift actually because it's not really -- there isn't really a clarity around who really is responsible for diagnosing and treating mothers at that point. And so we look forward to being able to hopefully contribute to that. But there is a significant unmet need also in the way it's treated. I think something that could act much faster than current treatments, something that's perhaps episodic, could be a great value to patients. So I do think there is an opportunity.

But again, we need to wait for the FDA decision, and we'll fully update everybody at that point.

Operator Operator

Our next question comes from Tim Anderson with Wolfe Research.

Timothy Anderson Analyst

I know that Biogen and Eisai continue to talk up the need to dose Alzheimer's drugs or LEQEMBI specifically chronically and not just for a finite period and you're talking about protofibrils and how they're the most neurotoxic species and that sort of thing. From what I understand, the science is really thin that says you need to dose chronically and the soluble forms of A-beta really make a difference in terms of continued disease progression. And empirically, if we just look at what came out of AAIC, we see a similar level of reduction and improvement in cognition with finite dosing with donanemab and we see continued curve separation with Lilly's product and your product. So doesn't that potentially call in the question the need for chronic dosing? And isn't that possibly a risk with LEQEMBI that docs actually only use it until plaque is cleared and then they stop, which would lead to a very different revenue opportunity for LEQEMBI?

Priya Singhal Executive

Thank you for the question. Yes. So this is a very important area of query and scientific hypothesis. So maybe before I really talk about LEQEMBI or donanemab, we can agree that Alzheimer's disease is really a progressive and eventually fatal condition with obviously neurodegeneration involved along the way. And what we've seen with LEQEMBI and actually multiple lines of evidence outside of LEQEMBI also with aducanumab in the past, is that when you clear plaque, it does not re-accumulate that easily.

But what you do see is progression of disease and you see an impact on the fluid biomarkers. So with LEQEMBI and with the gap period that we had in Phase II, we saw an increasing -- a reversal of the A-beta 42:40 ratio, implying that disease continues to progress. We saw very similar evidence with aducanumab. And I think what we see now with the plasma p-tau levels, in the past, we saw with aducanumab sort of decreasing with the EMERGE data set. And with LEQEMBI, what we've seen with p-tau181 is a stabilization.

And actually, if you saw the donanemab data on p-217, which was the plasma tau biomarker they use, and these track really quite closely, is that you see a slight increase. So I think we still need to understand with more data transparency, the donanemab data of what really

happens to patients who stopped at 6 months or stopped at 1 year. And we hope we'll see more of that data from their open-label extension and be able to draw conclusion. But when you look at the substrate for donanemab, it really does not make sense to continue to dose, one, because of substrate exhaustion and two, because of the presence of antidrug antibodies, close to about 84% to 87%. Whereas with LEQEMBI, you have the opportunity to have an individualized treatment duration discussion between the patient and the doctor because actually, it continues to impact soluble substrate, as Chris mentioned, and we are going to be generating data to actually look at this in a very systematic way with the Phase II open-label extension.

So I think that the jury is out but the multiple lines of evidence do not seem to indicate that you can stop and reverse Alzheimer's disease. So that's where I'll leave it.

Operator Operator

We'll go next to Evan Seigerman with BMO.

Evan Seigerman Analyst

So now that you've talked through some of the right size that you plan on doing and now you're focusing on BD on the back half of the year. Can you talk about how you think about the value that still exists for BD in the market today? And are you focused on really near-term revenue opportunities to grow the business or earlier-stage development items?

Christopher Viehbacher Executive

Well, it's quite interesting. You say today, when I talk to bankers, it's interesting. I think if you've got something that has really good data that there tends to be a price for that, and that price is more or less constant. I was asking bankers, do you think Merck would have had to pay even more for Prometheus, for instance, 2 -- 2 years ago when kind of the go-go days of biotech, and their view was no. And so I think if you find quality assets out there and that really doesn't vary that much.

What does vary is all the other stuff, right? We got a little bit more interest in more speculative things and that's what really sort of says, well, are things relatively expensive or not. And as a company, I think -- I always like to say, our investors [indiscernible] to make them rich and not someone else's shareholders. So if you're going to do a deal, you have to make sure that there is value creation for Biogen and its shareholders. And that's a hard thing.

And we all know that a lot of BD doesn't do that. The way I look at Biogen, we've had now the decision on LEQEMBI. We have a pending decision at the FDA for Zuranolone. We've got pending decisions for LEQEMBI around the [world]. If you look at Biogen over the next 2, 3 years, there's an opportunity for a return to growth over that time frame.

I think we are making some bold moves here to address our cost base and really reposition our resources in the company. And we have, I think, some super interesting products in our research and development pipeline that Priya mentioned. So if you look at it, we already have a value creation story. So anything that we're going to do has to be accretive to that picture.

And you do have to go look, and you're going to have to go look at hundred things before you

find something that really works, and that's what our teams are doing. The worst thing you can do is fall in love with something because then you lose your objectivity. I can tell you that we are laser focused on changing the trajectory of our share price. As I've heard from so many investors, our share price hasn't really moved in 10 years. So that's where we are focused on really driving -- being much more focused on shareholder value, and that means allocating capital in a way that's commensurate with that.

Operator Operator

The next question comes from Ami Fadia with Needham.

Ami Fadia Analyst

Maybe a bit of a follow-up on the last topic. It sounds like -- in the context of the Fit for Growth initiative, does it mean that from a BD perspective, you're unlikely to do a deal that's a significant lift from an R&D perspective over the next couple of years? And also, if you could provide some color on how you anticipate gross margin to evolve between 2023 and 2025? That would be helpful.

Christopher Viehbacher Executive

I missed part of that sentence out, does that mean on the BD that we would not do something I couldn't -- I didn't. Could you repeat the question?

Ami Fadia Analyst

Sure. Does it mean that you would not do a deal? Yes, that you would not do a deal that is a significant heavy lift from an R&D perspective over the next couple of years?

Christopher Viehbacher Executive

Well, I think we have enough heavy lifting from R&D to be honest. So I'm certainly looking at things that I think -- to me, it's less around the expenditure as how much risk you're taking. What I find hard is when we have a multiyear, 5-year type Phase III study that's essentially a proof of concept. That's, I think, what we're really trying to move away from.

Now what I would say though is we are clearly benchmarking. And I really want us to be rigorous on G&A. I want us to be competitive on the sales and marketing. On R&D, I want us to be super disciplined on capital. But I would say all the benchmarking we've done is that Biogen has actually been better than average on productivity.

And I do believe greatly in a lot of the capability within Biogen. And so I do think if there are things that really make sense, I actually have higher degree of trust in our R&D organization that -- I think that we should continue to invest in R&D.

The really important thing is that you really -- the secret about R&D is you have to design a killer experiment, define what the criteria are for moving into the next stage and don't allocate capital unless you really meet those data. The problem in a lot of organizations is we fall in love with something. The data aren't quite clear, but we'll go and keep going because we have it. And I think the discipline to kill stuff that doesn't meet its milestones is something that is probably more important than anything else to managing R&D investments. And that's why

I'm grateful to have Priya because I think Priya is extremely objective on this.

We all are. But again, I do think that we are an innovative company. And I wouldn't want to restrict too much Biogen's ability to invest in R&D over time but we're going to be extremely tough on what it is that we're going to choose to develop.

Michael McDonnell Executive

And then maybe, Ami, on the gross margin line in terms of how we expect that to evolve, we said in our prepared remarks that we do expect to see our cost of sales as a percentage of revenue to continue to increase throughout the rest of 2023, and that's pretty heavily tied to the outsized contract manufacturing revenue that we're seeing this year. And without guiding beyond 2023, I can just say, trend-wise, when you look at some of our bigger ticket items, we've got the anti-CD20s, which are highly profitable. They're kind of flat to somewhat declining, has kind of been the trend there. You've got TECFIDERA, where you've got generic competition in the U.S. Obviously, we do have legal protection through the early part of 2025, but that's a high-margin product, as you know.

And so when you look at the growth trajectory of those products versus the contract manufacturing, and we will continue to be aggressive in pursuing contract manufacturing opportunities if we can utilize them to fill space that we otherwise wouldn't use. You would expect that we would continue to see some pressure on the gross margin percentage. That's something that we'll manage. We are seeing. We did have $34 million of idle capacity charges during the quarter.

That is something that we hope will abate over time as LEQEMBI ramps up and we're able to fully utilize our facility in solid turns so that would be potentially an offset. But we don't see real material increases in our gross margin percentage, and that's something we're going to have to manage. And that's part of the reason why we put such a keen focus on our operating expenses and introduce such a meaningful cost reduction program.

Operator Operator

We'll go next to Brian Skorney with Baird.

Brian Skorney Analyst

Really just one, you guys had a role in developing both LEQEMBI and ADUHELM. And one of the things that seems to be jumping out as sort of the differential profile of these drugs in terms of ARIA rates. But seeing that those differences despite a very similar plaque removal. So I guess there's a lot of speculation and maybe remains a lot of uncertainty as to the underlying mechanism. But anything you can say in terms of sort of your thought process about how much of this may be sort of subspecies, target driven?

How much of it may just be sort of a matter of [PK]? I mean, it seems like the comments on subcu indicates -- at least some of it may be Cmax-driven, but just how are you guys currently thinking about the mechanism underpinning ARIA?

Priya Singhal Executive

Yes. Thank you, Brian. So overall, I think we don't fully understand the mechanism of ARIA, but the data have been replicated for LEQEMBI in terms of a low incidence of ARIA, in the sense that when you compare it with some of the other anti-amyloid -- anti-beta amyloid antibodies, it is significantly lower and replicated twice. So for example, in the Clarity AD study, we had an ARIA-E rate of about 12.6%, but with donanemab, we see an ARIA-E rate of 24%, a very similar sort of proportions with ARIA-H. So I think that it also depends on the population that has been recruited.

And as Chris mentioned, these populations have been slightly different with MCI being -- and the early population because we really believe that patients need to be treated earlier. So that could be playing a role. But I think overall, it's very hard to assess exactly what may be driving the differential dates. What I think we can say is that the observation that the incidence is significantly different. And therefore, I believe that the benefit risk is also different.

And that, I think, is what doctors should be looking at. Couple that with the efforts that we do have a very clear window of susceptibility with ARIA and LEQEMBI that we see, we know that it's really pretty much circumscribed to the first 6 months. There's no titration. So we see the rates that we do. And then it really [indiscernible] and recurrence is very, very low.

This helps us because we can help physicians really get on board, stay on the monitoring plan, and that is really the focus of Eisai with better understanding ARIA program. So I think overall, we have to look at the benefit risk. We've got the broad AD population that did not recruit via tau sub-stratification for LEQEMBI, and we have the results right up to tau PET because everybody, as you know, amyloid kind of progresses into the neurofibrillary tangles. And so it's really helpful to understand that there is a broad application with LEQEMBI and then there's a risk profile that's also in the broader population. I think with -- we do have a box warning, as you know, with the APOE4 patients who do have a higher rate of ARIA.

And this, again, is really what we see across the different molecules.

Christopher Viehbacher Executive

One of the things, Priya, that was -- so [indiscernible] and Priya over the weekend after this super interesting paper all that happened at AAIC and the differences. And the thing that struck me is just really how complex this is and how much there is to really analyze and understand. But one of the things that struck me was that there is a difference in safety not just in the broad population, but we see that in every subgroup, too.

Priya Singhal Executive

Yes. Every subgroup.

Christopher Viehbacher Executive

I mean, if you're looking at the APOE group, heterozygous, homozygous is a difference. And if these drugs were similar, you wouldn't expect such a dramatic difference. I mean we're talking about -- in some subgroups, it can be as much as 3:1 ratio on the safety. And that's why I think we're going to spend an awful lot more time analyzing what's really going on here. And that's what I said at the outset.

We're really just at the start of this. There's still so much we don't know, but this is going to generate an awful lot of research and we're going to start digging into this and understanding all of these different subtleties that are there.

But I think these differences are going to be quite important. As Priya said, the jury is still out on that, but we have an awful lot of signs about what's really going on here. And that's why as a company, at Biogen, we don't see the launch of LEQEMBI as the end to our commitment to Alzheimer's. As Priya pointed out, we have other programs in Alzheimer's and we're going to be continuing to do research because it is really our ambition to be along with our partners at Eisai, the absolute leader in what we think is going to be an extremely significant market.

Operator Operator

Next question comes from Chris Schott with JPMorgan.

Christopher Schott Analyst

I just wanted to -- I appreciate all the color on the call, but I just want to come back to the LEQEMBI and kind of the ramp from here. I know you've talked about this being kind of a gradual process. But based on the early feedback you've had from the market with the launch, I guess any incremental color of -- is this going faster or slower than you might have anticipated? And maybe just as part of that, what have been the biggest kind of positives or negatives on the rollout so far as you just try to kind of better assess? How to think about these next few quarters and years from here?

Christopher Viehbacher Executive

Well, as to what you anticipate it's kind of hard, as I say, this is only the second time in my career where I've actually seen a brand-new therapeutic area actually open up. And so when you think about Alzheimer's patients and visiting neurologists, beyond cognitive tests and as I say, perhaps prescribing the anti-cholinergic like donepezil hasn't really been much to do. And now we do have a treatment. And this is going to upend a lot of the processes within Neurology practices. It's extremely exciting.

But really, the uptake is geared on how prepared are the sites. And this is variable around the country. You've had some sites. Obviously, they've been involved in clinical trials. Some of them have different patient populations and we see that some sites are quite advanced and are ready to go.

Some sites have been more in a wait-and-see mode, but I think are all ramping up. One of the things that we have been doing is -- is really trying to figure out where are the sites that are really ready and actually deploying our resources to those sites with -- then a secondary type of approach to sites that aren't quite ready and helping them. So it all depends on really how advanced the sites are, how ready they are that it's really going to define the uptake. And that's how we have to target our resources to that and really assess the site activation, if you like. But so far, we're getting a lot of positive feedback.

Physicians are getting a lot of inquiries from patients. I think they will have to figure out exactly what's the right patient for this, and that's where we have to do a lot of education. And

we have these online programs and other programs to help educate physicians. There's a significant amount. I mean you just talk about -- what we've been talking about in terms of these protofibrils, about the different patient populations, all of those things are going to engage the whole Neurology community here.

But so far, everything is -- as far as we're concerned, the launch is going to plan.

Operator Operator

Our last question comes from Paul Matteis with Stifel.

Paul Matteis Analyst

I wanted to just briefly come back to Zuranolone. I've been really surprised by the lack of discussion on the call in the prepared remarks compared to prior calls. And can you just -- am I overly reading into this? I guess you're gearing up for potentially a new antidepressant approval. And Chris, at one point, you called this your most undervalued asset.

So are you as bullish on this drug as you were before? And I guess if you didn't get the MDD approval, but that only got PPD. How would Biogen execute on that opportunity? Thank you.

Christopher Viehbacher Executive

Look, we're in late-stage review. So I think it's pretty normal that we don't want to disturb that process. And we obviously don't want to say anything that affects the FDA. I have to confess to a little bit of superstitiousness on my side. And I just -- I'd like to see the FDA decision, and then we'll be happy to talk lots about it.

But the opportunity is huge out there, Paul.

Charles Triano Executive

Great. Thanks, Chris and thanks to everybody today for joining.

Operator Operator

This does conclude today's conference call. Thank you for your participation. You may now disconnect.